

**REMARKS**

Reconsideration and withdrawal of the objections to and the rejections of this application in view of the amendments and remarks herewith, is respectfully requested, as the changes place the application in condition for allowance.

**I. Status of the Claims and Formal Matters**

Claims 1-26, and 28-32 are under examination in this application. Claims 27 and 33-37 are withdrawn from consideration. Claims 1, 25, 28 and 32 have been amended, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents. Original claim 3 has now been cancelled. No new matter has been added by these amendments. Support for these amendments is found throughout the specification and in the original claims.

Claims 1, 25, 28 and 32 have been amended, to recite that the microchannels are about 10 to 50 microns. Support for the amendment can be found on page 33, line 10 of the specification.

An executed form for a Revocation of Power of Attorney with New Power of Attorney and a Change of Correspondence Address has been filed.

## **II. THE REJECTIONS UNDER 35 U.S.C. § 103(A) ARE OVERCOME**

### **A. Rejection of Claims 15-17 and 32-34.**

Claims 1-26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al., Vacanti et al., Mastrangelo et al., and if necessary, Cima et al, Marra et al. Applicants respectfully traverse the rejection.

The present invention provides a three dimensional system comprised of interconnected layers for cell growth. One or more layers of the invention will have patterned microchannels that enable physiological systems (e.g., vascular networks) to form. Thus, three dimensional systems of the invention provide the high resolution patterning that is required to mimic complex tissues and vital organs.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974). Here, the cited references fail to teach or suggest all limitations of the claimed invention. In particular, the combination of the cited references fails to teach or suggest a multi-layered three dimensional structure having microchannels that are about 10 to about 50 microns in diameter. As such, the cited references fail to teach or suggest engineered systems that are capable of producing a vascular network of this resolution. Thus, the engineered systems of the cited references lack the functional vascular networks and improved tissue structures of the present invention.

There must be some prior art teaching which would have provided the necessary incentive or motivation for modifying the reference teachings. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (BOPAI 1993). Further, as stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification." For the §103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants' disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed.Cir. 1988).

No where in the cited references is the need to produce smaller channels for improved physiology acknowledged. The cited references do not teach or suggest this modification of their systems and consequently, there is no incentive or motivation provided for the

modification. Likewise, no reasonable expectation of success in achieving such a modification can be found in the cited references.

If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Claims 1, 25, 28 and 32 are directed to a multi-layered structure having at least one layer comprised of microchannels that are about 10 to about 50 microns in diameter. Claims 2-24 depend from claim 1, claim 26 depends from claim 25, and claims 29-31 depend from claim 28. As the cited references fail to teach or suggest the invention of claims 1, 25, 28 and 32, claims 2-24, 26 and 29-31 are by extension also non-obvious.

Reconsideration and withdrawal of the rejections of claims 1-26 and 28-32 under 35 U.S.C. § 103 is respectfully requested.

**REQUEST FOR INTERVIEW**

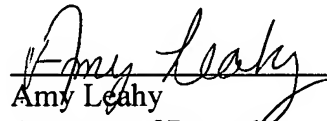
If any issue remains as an impediment to allowance, a further interview with the Examiner and SPE are respectfully requested; and, the Examiner is additionally requested to contact the undersigned to arrange a mutually convenient time and manner for such an interview.

**CONCLUSION**

In view of the amendments and remarks herewith, the application is in condition for allowance. Favorable reconsideration of the application, reconsideration, and withdrawal of the objections to and rejections of the application, and prompt issuance of a Notice of Allowance are respectfully requested.

Respectfully submitted,

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